

CLAIM AMENDMENTS

1. (previously presented) A light emitting diode comprising:
- 5 an insulating substrate;
- a semiconductor stack positioned over the insulating substrate, the semiconductor stack comprising a first surface and a second surface, a distance between the first surface and the insulating
- 10 substrate is greater than a distance between the second surface and the insulating substrate;
- a reverse-tunneling layer over the first surface;
- a first transparent ohmic contact electrode positioned directly on the reverse-tunneling layer;
- 15 and
- a second transparent ohmic contact electrode positioned over the second surface.
2. (currently amended) The light emitting diode of claim
- 20 1, wherein the insulating substrate comprises sapphire, and the first transparent ohmic contact electrode and the second transparent ohmic contact electrode comprise the same non-metal material.
- 25 3. (previously presented) The light emitting diode of claim 1, wherein the first transparent ohmic contact electrode or the second transparent ohmic contact electrode comprises at least one selected from a group comprising indium tin oxide (ITO), cadmium tin oxide
- 30 (CTO), and titanium-tungsten nitride (TiWN).
4. (canceled)

5. (original) A light emitting diode comprising:
an insulating substrate;
a buffer layer positioned on the insulating
5 substrate;
an n⁺-type contact layer positioned on the buffer
layer, the contact layer comprising a first surface
and a second surface;
an n-type cladding layer positioned on the first
10 surface of the n⁺-type contact layer;
a light-emitting layer positioned on the n-type
cladding layer;
a p-type cladding layer positioned on the
light-emitting layer;
15 a p-type contact layer positioned on the p-type
cladding layer;
an n⁺-type reverse-tunneling layer positioned on
the p-type contact layer;
a p-type transparent ohmic contact electrode
20 positioned on the n⁺-type reverse-tunneling layer; and
an n-type transparent ohmic contact electrode
positioned on the second surface of the n⁺-type contact
layer;
wherein the p-type transparent ohmic contact
25 electrode and the n-type transparent ohmic contact
electrode comprise the same materials.

6. (original) The light emitting diode of claim 5
wherein the insulating substrate comprises sapphire.

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7. (original) The light emitting diode of claim 5
wherein the p-type transparent ohmic contact electrode

and the n-type transparent ohmic contact electrode are made of at least one selected from a group comprising indium tin oxide, cadmium stannate, and titanium-tungsten nitride.

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8. (canceled)

9. (canceled)

10 10. (new) A light emitting diode comprising:

an insulating substrate;

a semiconductor light emitting stack positioned over the insulating substrate, the semiconductor light emitting stack comprising a first surface and a second surface, a distance between the first surface and the insulating substrate is greater than a distance between the second surface and the insulating substrate;

a first non-metal transparent ohmic contact electrode positioned over the first surface; and

a second non-metal transparent ohmic contact electrode positioned over the second surface,

wherein the first non-metal transparent ohmic contact electrode and the second non-metal transparent ohmic contact electrode comprise the same material.

11. (new) The light emitting diode of claim 10, wherein the first non-metal transparent ohmic contact electrode and the second non-metal transparent ohmic contact electrode comprise at least one selected from a group comprising indium tin oxide (ITO), cadmium tin oxide (CTO), and titanium-tungsten nitride (TiWN).